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ABSTRACT

This publication collects representative and varied curriculum activities in the area of nutrition education. Aimed at stimulating thought and activities related to nutrition among both teachers and their 9- through 12-year-old students, the booklet suggests to teachers the ease with which nutrition information can be incorporated into the classroom. Nutrition education objectives for grades four through six, dietary guidelines, lists of basic food groups, nutrient information, recommended dietary daily allowances and metric information are covered. In addition, nutrition activities in the areas of math, social studies, language arts, and sciences are proposed. (Author/PH)

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INTEGRATED NUTRITION EDUCATION and TRAINING

Ages 9-12

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PS011889

MEAT, BEANS | MILK, CHEESE | FRUITS, VEGETABLES | BREADS, CEREALS | FATS SWEETS

FOREWORD

The Illinois State Board of Education is pleased to make available this publication of suggested curriculum activities regarding nutrition education.

It has been developed to assist educators in the planning and implementation of this important program. This publication is not inclusive of all available nutrition education activities which could possibly be implemented; it is a representation of the many varied activities which exist in the curriculum. For further information or assistance, please contact the Program Planning and Development Section in this agency.

This publication was developed by Belleville School District 118 and it is being printed and distributed free of charge through the cooperation of that district. We are appreciative of their assistance.

Donald G. Gill

Donald G. Gill
State Superintendent of Education

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INTRODUCTION

This booklet is structured upon two main goals. First, it seeks to stimulate nutritional thought and behavior of both educators and students through the implementation of diversified learning situations. The activities are enjoyable for the students and simple to implement for the teacher. Second, the booklet hopes to suggest to every teacher the ease with which nutrition information can be incorporated into the classroom.

The nutritional health-state of students affects their learning capacity. Eating patterns established early in life can have an effect on an individual's life-long mental and physical condition which ultimately affects the quality of their life. They should be equipped with basic nutrient information and research skills to decipher accurate information as it evolves among the unsound claims.

Especially with today's advertising efforts, healthy eating habits and accurate knowledge of food is not acquired without effort. Students need to be equipped with a nutrition education that will be pertinent throughout their lives. Most importantly the educator and student must acknowledge that what they eat affects their health and that as an individual, they are responsible for properly fueling their human machine.

The classroom activities supplied by this booklet support the following Illinois Nutrition Education and Training Act concepts. Whether these activities or those devised by educators and students are used, the goals will be satisfied if nutritional eating habits are stimulated through classroom activities.

ILLINOIS NUTRITION EDUCATION AND TRAINING ACT CONCEPTS

The Nutrition Education and Training Program in Illinois has identified these concepts as most important nutrition messages for students to comprehend. Please introduce and then summarize learning activities with one or more of them. If displayed on a large chart in the room, the concept(s) related to each activity can be easily pointed out by the students.

Physiological Facts

Nutrition is the way the body uses food. We eat food to live, to grow, to keep healthy and well, and to get energy for work and play.

Nutrients

Food is made up of different nutrients that work together and interact with body chemicals to serve the needs of the body. Many kinds and combinations of food can provide a nutritionally adequate diet.

Food Handling

The way food is handled influences the amounts of nutrients in food, its safety, quality, appearance, taste, acceptability, and cost.

Life Cycle

All persons throughout life have need for the same nutrients, but in varying amounts. The amount of nutrients needed is influenced by age, sex, activity and state of health.

Social/Psychological Aspects of Food

Food can be chosen to fulfill physiological needs and at the same time satisfy social, cultural, and psychological wants.

Food Technology

The nutrients, singly and in combinations of chemical substances simulating natural foods, are available in the market; these may vary widely in usefulness, safety of use and economy.

Nutrition and Society

Food plays an important role in the physical and psychological health of the society or a nation just as it does for the individual and family.

References:

Ullrich, Helen D. and Briggs, George M., "Improving Education Concerning Nutrition: The General Public," 1969 White House Conference on Food Nutrition and Health, pp. 175-187.

Mayer, Jean, ed. U.S. National Policies in the Seventies, San Francisco, W. H. Freeman and Company, 1973.

These concepts evolved from the Interagency Committee on Nutrition Education, 1964.

NUTRITION EDUCATION
OBJECTIVES FOR GRADE FOUR

	Pages	Related Concepts
1.Specify the number of servings from each food group we need daily.	18,45	nutrients, life cycle
2.Recognize why we need water each day.	19,21	physiological facts
3.Identify foods high in protein.	16,31	nutrients; food technology
4.Identify foods high in carbohydrates.	31,32,43	nutrients; food technology
5.Identify foods high in calcium.	49,56	nutrients; food technology
6.Identify foods high in Vitamin A.	35,47,62	nutrients; food technology
7.Identify foods high in Vitamin C.	17,24,44, 52	nutrients; food technology
8.Identify foods high in fats.	41	nutrients; food technology
9.Recognize the benefits of a nutritious breakfast and the elements of one.	22,23,38	nutrients; food technology
10.Distinguish between a nutritious, and low nutrient snack.	40	nutrients; life cycle
11.Recognize the effects motions can have on digestion.	46,55,58, 64	social/ psychological aspects of foods
12.Recognize the nutrition related effects of food processing.	30,31	food technology

NUTRITION EDUCATION
OBJECTIVES FOR GRADES FIVE AND SIX

	Pages	Related Concepts
1. Identify the benefits each of these six major nutrients provide for <u>their</u> body. Proteins Fats Carbohydrates Vitamins Minerals Water	19,21,33, 11,42,44, 47,53,56	physiological facts; nutrients
2. List the number of servings needed each day from the basic food groups.	26,45	nutrients; life cycle
3. Determine the number of food group servings in a day's menu.	26,45	physiological facts; social/ psychological aspects of food
4. Explain what happens to food once it enters the body.	21,38,40, 41,43,53	nutrients
5. Recognize that B vitamins are found in the bread/cereal group and in the milk group.	22,28,54, 65	nutrients
6. Recognize that Vitamin C is needed each day and can not be stored in the body.	17,24,44, 52	nutrients food handling
7. Recognize Vitamin C foods and proper storage techniques for them.	17,24,44, 52	nutrients
8. Recognize food sources of calcium and riboflavin are found in milk.	22,28,49, 56,63	food handling
9. Distinguish improper cooking techniques that destroy vitamins and minerals.	52	physiological facts; nutrients; life cycle; social/ psychological aspects of food; food technology

	Pages	Related Concepts
10. Recognize the causes of malnutrition.	23,37	physiological facts; nutrients; life cycle
11. Recognize the benefits of a nutritious breakfast and elements of one.	38	nutrients; food handling; life cycle; social/ psychological aspects of food; food technology
12. Determine the elements of a nutritious lunch.	18	nutrients; food handling; life cycle; social/ psychological aspects of food; food technology
13. Distinguish between a nutritious and low nutrient snack.	40	food technology

INTERMEDIATE MATH ACTIVITIES

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NUTRITION AND YOUR HEALTH
DIETARY GUIDELINES FOR AMERICANS

What should you eat to stay healthy?

Hardly a day goes by without someone trying to answer that question. Newspapers, magazines, books, radio, and television give us a lot of advice about what foods we should or should not eat. Unfortunately, much of this advice is confusing.

Some of this confusion exists because we don't know enough about nutrition to identify an "ideal diet" for each individual. People differ - and their food needs vary depending on age, sex, body size, physical activity, and other conditions such as pregnancy or illness.

In those chronic conditions where diet may be important - heart attacks, high blood pressure, strokes, dental caries, diabetes, and some form of cancer - the roles of specific nutrients have not been defined.

Research does seek to find more precise nutritional requirements and to show better the connections between diet and certain chronic diseases.

But today, what advice should you follow in choosing and preparing the best foods for you and your family?

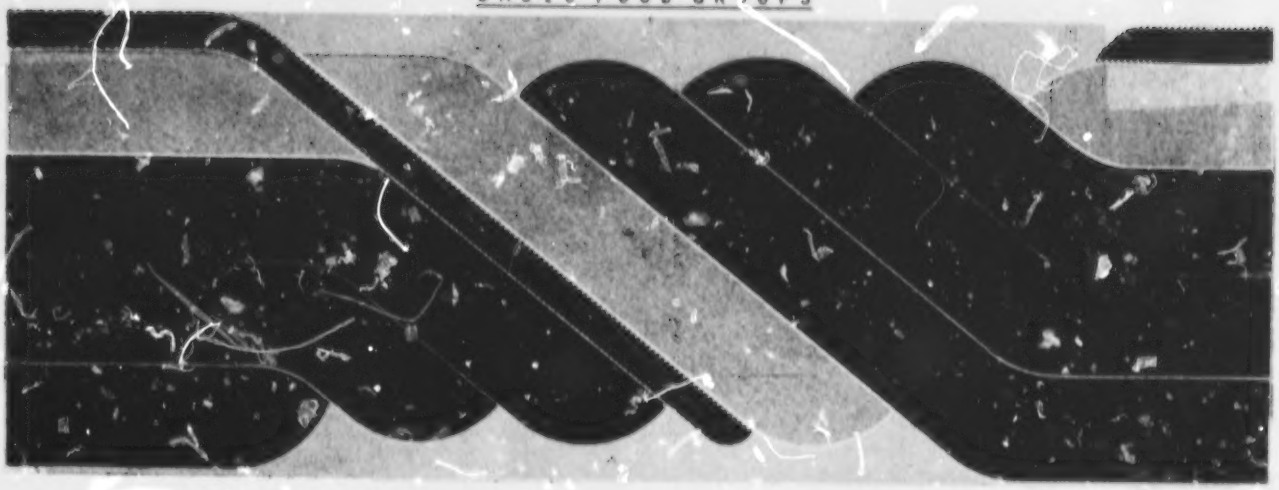
The guidelines below are suggested for most Americans. They do not apply to people who need special diets because of diseases or conditions that interfere with normal nutrition. These people may require special instruction from trained dietitians, in consultation with their own physicians.

These guidelines are intended for people who are already healthy. No guidelines can guarantee health or well-being. Health depends on many things, including heredity, lifestyle, personality traits, mental health and attitudes, and environment, in addition to diet.

Food alone cannot make you healthy. But good eating habits based on moderation and variety can help keep you healthy and even improve your health.

DIETARY GUIDELINES FOR AMERICANS

-Eat a variety of foods
-Maintain ideal weight
-Avoid too much fat, saturated fat, and cholesterol
-Eat foods with adequate starch and fiber
-Avoid too much sugar
-Avoid too much sodium
-If you drink alcohol, do so in moderation



The food we consume can be categorized into five food groups. These groups of foods work together to make up a complete diet, just as a strong rope is composed of strands that intertwine and support each other. Each of the strands symbolizes a food group. Four of these groups--Fruit-Vegetable, Bread-Cereal, Milk-Cheese, and Meat-Poultry--supply the vitamins, minerals, and protein, the nutrients the body needs, as well as calories. The fifth group--Fats-Sweets-Alcohol provides mainly calories and its nutritional contribution is more limited than that of other groups.

Servings and Calories

Lower	In-Between	Higher
1 cup raw vegetable salad without dressing (40)	3/4 cup raw vegetable salad with 1 tablespoon French dressing (95)	1/2 cup potato salad (125)
1/2 cup cooked cabbage (15)	1/2 cup coleslaw (60)	2 rolls stuffed cabbage (260)
1 medium baked potato (95)	2/3 cup mashed potatoes prepared with milk and butter (125)	1/2 cup hashed brown potatoes (170)
1 medium raw apple (80)	1 sweetened baked apple (160)	1/8 of 9-inch apple pie (300)
1/2 cup fresh citrus sections (40)	1/2 cup jellied citrus salad (120)	1/2 cup lemon pudding (145)
1/2 cup cooked green beans (15)	1/2 cup stir-fried green beans (35)	1/2 cup green bean-mushroom casserole (70)
1/2 cup diced fresh pineapple (40)	1/2 cup canned pineapple chunks in natural juice (70)	1/2 cup canned pineapple chunks in heavy sirup (95)

VEGETABLE
FRUIT
Group

SERVINGS:
4 or more

Important for contribution of Vitamins A and C and fiber. Dark-green and deep-yellow vegetables are good sources of Vitamin A. Dark-green vegetables, if not overcooked, are reliable sources of Vitamin C as well as riboflavin, folacin, iron, and magnesium. Nearly all vegetables and fruits are low in fat and none contains cholesterol.

Servings and Calories

Lower	In-Between	Higher
2 oz. broiled chicken (95)	1/2 fried chicken breast (2-3/4 oz.) or 2 drumsticks (2-1/2 oz.) (160 to 180)	8 oz. individual chicken pot pie (505)
3 oz. lean hamburger (without bun) (185)	3 oz. regular hamburger (without bun) (235)	3-1/2 oz. cheeseburger (without bun) (320)
3 oz. lean roast beef (205)	3 oz. Swiss steak (315)	2/3 cup beef stroganoff over noodles (525)
2-1/2 oz. broiled cod with butter or margarine (120)	2-1/2 oz. fried, breaded ocean perch (160)	2-1/2 oz. baked stuffed fish (1/2 cup bread stuffing) (325)
1/2 cup boiled navy beans (95)	1 cup navy bean soup (170)	1 cup baked navy beans (310)
3 oz. boiled shrimp (100)	3 oz. fried breaded shrimp (190)	1/2 cup shrimp Newburg (285)

MEAT POULTRY
and
FISH BEANS
GROUP

SERVINGS:
2 or more

Provide protein, phosphorus, Vitamin B_6, B_{12}, and other vitamins and minerals. Red meats and oysters--good sources of zinc, liver and egg yolks--good sources of Vitamin A; dry beans, dry peas, soybeans and nuts are worthwhile sources of magnesium.

All meats contain cholesterol which is present in both the lean and fat.

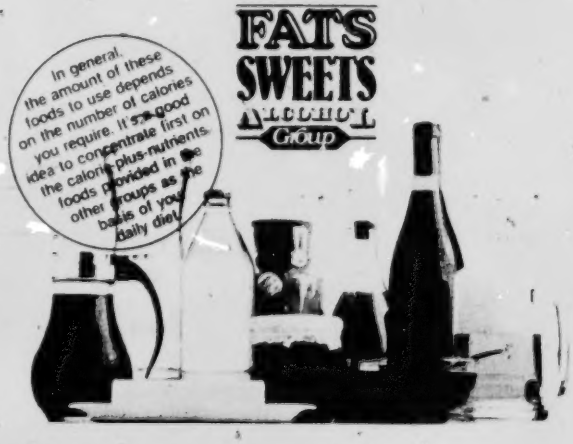
FATS
SWEETS
ALCOHOL

No serving size is defined because a basic number of servings is not defined for this group.

These products, with some exceptions such as vegetable oils provide mainly calories. Vegetable oils generally supply Vitamin E and essential fatty acids.

Servings and Calories

Lower	In-Between	Higher
1 teaspoon sugar (15)	2 tablespoons pancake syrup (120)	12 fl. oz. cola (145)
12 fl. oz. light beer or 3-1/2 fl. oz. dry wine (85 to 95)	12 fl. oz. regular beer or 3-1/2 fl. oz. sweet wine (140 to 150)	Tom Collins--1 fl. oz. gin & 6 fl. oz. Tom Collins (195)
3 oz. popsicle (70)	1/2 cup (single dip) sherbert (135)	1.2 oz. milk chocolate candy bar (175)


In general, the amount of these foods to use depends on the number of calories you require. It's a good idea to concentrate first on the calorie-plus-nutrients foods provided in the other groups as the basis of your daily diet.
FATS
SWEETS
ALCOHOL
Group

PKC/815k

Servings and Calories

Lower	In-Between	Higher
1/2 cup (single dip) ice milk (95)	1/2 cup (single dip) ice cream (135)	1 cup vanilla milkshake (255)
1 oz. Cheddar cheese (115)	1 cup cheese souffle (260)	1 cup macaroni and cheese (430)
8 fl. oz. carton plain lowfat yogurt (145)	8 fl. oz. carton vanilla flavored yogurt (195)	8 fl. oz. carton yogurt with fruit or 2 dips frozen yogurt (225 to 240)

MILK
CHEESE
Group

SERVINGS:
CHILDREN--(under 9) 2-3 servings
CHILDREN--(9-12) 3 servings
TEENAGERS--4 or more
ADULTS--2 or more

Provide calcium and riboflavin; contribute protein and Vitamins A, B_6, and B_{12}. Also provides Vitamin D, when fortified with this vitamin.

Servings and Calories

Lower	In-Between	Higher
1 cup plain corn flakes (95)	1 cup sugar-coated corn flakes (155)	1/2 cup crunchy cereal (See recipe p.42) (280 to 290)
1/2 cup steamed or boiled rice (85)	1/2 cup fried rice without meat (185)	1/2 cup rice pudding (235)
1 slice of bread (55 to 70)	1 corn muffin (125)	1 Danish pastry (275)
1/2 cup cooked noodles (100)	6 cheese ravioli with sauce (175)	1 cup lasagna (345)

From: "Food," Home and Garden Bulletin #228, prepared by Science and Education Administration, U.S. Department of Agriculture. Copies may be obtained for $3.50 by writing: U.S. Department of Agriculture, Office of Governmental and Public Affairs, Publications Division, Washington, D.C. 20250

BREAD
CEREAL
Group

SERVINGS:
4 or more

Important sources of B vitamins and iron. Also provides protein as well as magnesium, folacin, and fiber.

NUTRIENT CHART

NUTRIENT	IMPORTANT SOURCES OF NUTRIENT	SOME MAJOR PHYSIOLOGICAL FUNCTIONS
MACRONUTRIENTS		
Protein	Meat, poultry, fish, dried beans and peas, eggs, nuts, cheese, milk	Furnishes amino acids necessary for the building and maintenance of body tissues; provides energy when carbohydrates and fats are lacking.
Carbohydrates	Cereal, cereal products, potatoes, beets, carrots, dried beans, squash, corn, bananas, dates, figs, bread, sugar	Supplies energy so protein can be used for growth and maintenance of body cells, contributes glucose for the brain and central nervous system.
Fat	Shortening, oil, butter, margarine, egg yolks, salad dressing, avocados, olives, nuts	Supplies energy, increases palatability of foods, supplies fatty acids which are essential to the diet.
Water	Water, milk, juices, fruits, vegetables, meats	Helps give structure and form to the body, gives aqueous environment necessary for cell metabolism, provides means for maintaining a stable body temperature.
FAT-SOLUBLE VITAMINS		
Vitamin A (Retinol)	Liver, eggs, dark green and deep yellow vegetables, sweet potatoes, cantaloupe, carrots, squash, butter, margarine	Aids in the prevention of night blindness, controls bone and teeth growth, aids in keeping skin clear and smooth, allows for healthy mucuous membranes and keeps them firm, healthy, and free from infection.
Vitamin D	Vitamin D milk, fish liver oils, eggs, sardines, salmon, tuna, sunshine on skin	Helps absorb calcium from the digestive tract and build calcium and phosphorus into bones and teeth.
Vitamin E	Corn oil, green leafy vegetables, wheat germ, liver, egg yolk, butter, milkfat	Acts as an antioxidant in protecting Vitamin A and unsaturated fatty acids from destruction by oxygen.
WATER-SOLUBLE VITAMINS		
Vitamin C (Ascorbic Acid)	Broccoli, cauliflower, oranges, grapefruits, lemons, limes, papayas, mangoes, stawberries, cantaloupe, tomatoes, green peppers	Makes walls of blood vessels firm, aids in formation of cementing materials that hold body cells together, aids in healing of wounds, broken bones, and possibly helps prevent infection.

NUTRIENT	IMPORTANT SOURCES OF NUTRIENT	SOME MAJOR PHYSIOLOGICAL FUNCTIONS
Thiamine (B_1)	Lean pork, liver, kidney, nuts, wheat germ, whole grain products, fish, poultry, eggs	Aids in the normal functioning of nervous system, plays essential role in digestion and absorption of carbohydrates.
Riboflavin (B_2)	Liver, heart, kidney, milk, cheese, fish, poultry, eggs, dark green vegetables, cottage cheese, dried beans	Enables the cells to better use oxygen, helps keep skin and lips healthy.
Niacin	Peanut butter, meat, poultry, fish, milk, enriched or whole grain breads and cereals, dried beans and peas	Aids in keeping nervous system, skin, mouth, tongue and digestive tract healthy, helps cells use other nutrients.
Vitamin B_6	Beef, liver, pork, ham, soybeans, lima beans, kale, bananas, spinach, avocado, whole grain cereals, potatoes	Lack of this vitamin could result in central nervous system disorders, is necessary for the normal metabolism of proteins.
Folic Acid	Green leafy vegetables, liver, kidney, whole grain cereals, yeast, mushrooms	Aids in the formation of normal blood cells, helps in the function of enzyme and other biochemical systems.
Vitamin B_{12}	Liver, meat, fish, shellfish, kidney, milk, milk products, eggs, poultry, vegetarian diets should include milk or a B_{12} supplement - (if no animal foods are used)	Aids in the formation of normal blood, helps in the maintenance of nerve tissue.
Biotin	Kidney and liver, milk and eggs, molasses, most fresh vegetables, nuts, grains	Regulates the use of carbohydrates and regulates the body in the formation and utilization of fatty acids.
MINERALS		
Calcium	Milk, yogurt, hard cheese, sardines and salmon with bones, collard, kale, mustard, dark green leafy vegetables.	Essential in giving strength to bones and teeth, is necessary for clotting of blood, is an important function of normal muscle contraction, assists in response of nerve tissue to stimuli.
Iron	Enriched farina, prune juice, liver, dried beans and peas, red meat, egg yolk	Aids in the formation of hemoglobin which is the red substance in blood responsible for carring oxygen to and carbon dioxide from the cells, aids in the increasing resistance to infection, is involved in enzyme functioning of tissue respiration.
Iodine	Seafoods, iodized salt	Helps regulate the rate at which the body uses energy, aids in the prevention of goiter.

NUTRIENT	IMPORTANT SOURCES OF NUTRIENT	SOME MAJOR PHYSIOLOGICAL FUNCTIONS
Phosphorus	Milk and milk products, meat, poultry, fish, eggs, whole grain cereals, legumes	Helps utilize calcium to provide strong bones and teeth. Many internal activities are regulated by this mineral.
Magnesium	Legumes, whole grain cereals, milk, meat, seafood, nuts, eggs, green vegetables	Aids in carbohydrate regulation and production of energy within the cells, assists in making nerves and muscles work.
Zinc	Meat, liver, eggs, oysters, other seafoods, milk, whole grain cereals, peas, garbanzo beans	Assists in transporting carbon dioxide by the blood and helps to secrete hydrochloric acid in the process of digestion.
Copper	Seafood, meat, eggs, legumes, oysters, cocoa, whole grain cereals, nuts, raisins	Is required for utilizing iron in producing hemoglobin in the blood, is a part of several enzymes that occur in metabolic process.

Reference:

People, Food, and Science, by Patricia Cote, 1972, Ginn and Company.

Laurel's Kitchen, by Laurel Robertson, Carol Flinders, and Bronwen Godfrey, 1976, Nilgiri Press.

PKC/926k

17

RECOMMENDED DAILY DIETARY ALLOWANCES

	Age	Weight (lbs)	Protein (g)	Vit. A (R.E*)	Vit. D (mg**)	Vit. E (mg T.E) (***)	Vit. C (mg)	Thiamin (mg)	Riboflavin (mg)	Niacin (N.E.) (****)	Vit. B_6 (mg)	Folacin (ug)	Vit. B_{12} (ug)	Calcium (mg)	Phos. (mg)	Mag. (mg)	Iron (mg)	Ziac (mg)	Iodine (ug)
Infants	To 6 mos.	13	kg x 2.2	420	10	3	35	0.3	0.4	6	0.3	30	0.5	360	240	50	10	3	40
	To 1 yr.	20	kg x 2.0	400	10	4	35	0.5	0.6	8	0.6	45	1.5	540	360	70	15	5	50
Children	1-3	29	23	400	10	5	45	0.7	0.8	9	0.9	100	2.0	800	800	150	15	10	70
	4-6	44	30	500	10	6	45	0.9	1.0	11	1.3	200	2.5	800	800	200	10	10	90
	7-10	62	34	700	10	7	45	1.2	1.4	16	1.6	300	3.0	800	800	250	10	10	120
Males	11-14	99	45	1000	10	8	50	1.4	1.6	18	1.8	400	3.0	1200	1200	350	18	15	150
	15-18	145	56	1000	10	10	60	1.4	1.7	18	2.0	400	3.0	1200	1200	400	18	15	150
	19-22	154	56	1000	7.5	10	60	1.5	1.7	19	2.2	400	3.0	800	800	350	10	15	150
	23-50	154	56	1000	5	10	60	1.4	1.6	18	2.2	400	3.0	800	800	350	10	15	150
	51 +	154	56	1000	5	10	60	1.2	1.4	16	2.2	400	3.0	800	800	350	10	15	150
Females	11-14	101	46	800	10	8	50	1.1	1.3	15	1.8	400	3.0	1200	1200	300	18	15	150
	15-18	120	46	800	10	8	60	1.1	1.3	14	2.0	400	3.0	1200	1200	300	18	15	150
	19-22	120	44	800	7.5	8	60	1.1	1.3	14	2.0	400	3.0	800	800	300	18	15	150
	23-50	120	44	800	5	8	60	1.0	1.2	13	2.0	400	3.0	800	800	300	18	15	150
	51 +	120	44	800	5	8	60	1.0	1.2	13	2.0	400	3.0	800	800	300	10	15	150
Pregnant			+30	+200	+5	+2	+20	+0.4	+0.3	+2	+0.6	+400	+1.0	+400	+400	+150	A	+5	+25
Lactating			+20	+400	+5	+3	+40	+0.5	+0.5	+5	+0.5	+100	+1.0	+400	+400	+150	A	+10	+50

A - The increased requirements during pregnancy and lactation cannot be met by the iron content of habitual American diets nor by the existing iron stores of many women; therefore the use 30-60 milligrams of supplemental iron is recommended.

ug. = Microgram

* Retinol equivalents

** Micrograms of cholecaloiflerol 10 ug. cholecalciferol = 400 I.U. Vit. D.

*** tocopherol equivalents

****Niocine equivalents

From: Recommended Dietary Allowances, Revised 1979. Food and Nutrition Board
National Academy of Sciences-National Research Council, Washington, D.C.

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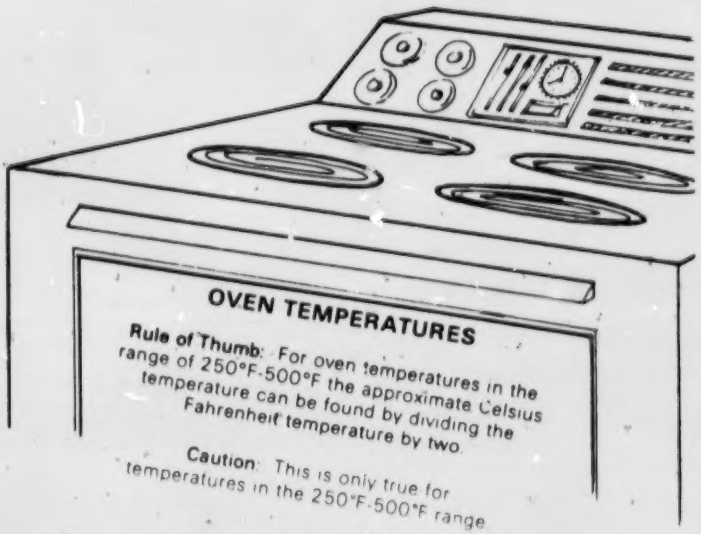
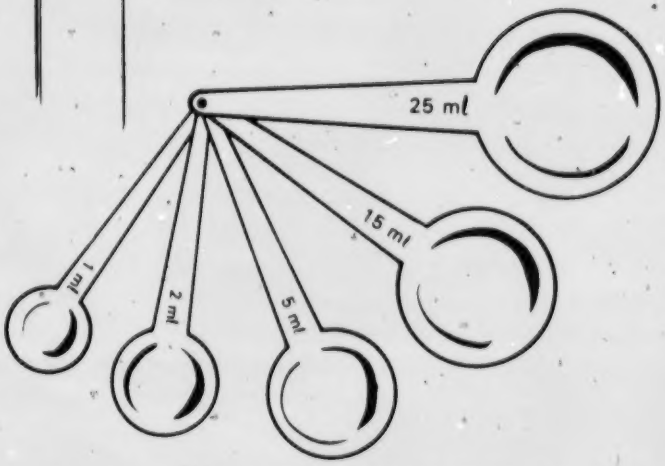
It should be noted that the metric system is well integrated in nutrition education as seen in the RDA's and nutritional labels that measure in milligrams (mg) and milliliters (ml). Food preparation is another area in which the metric system can be effectively utilized. Typically, the unit of measure for weight is the gram, whereas, the unit of measure for liquids is the liter. By taping the metric equivalents listed below to measuring cups and spoons, the conversion is simplified. Also, in order to facilitate the weighing process for conversion to the gram measurement, the purchase of a scale may be appropriate.


OVEN TEMPERATURES
Rule of Thumb: For oven temperatures in the range of 250°F-500°F the approximate Celsius temperature can be found by dividing the Fahrenheit temperature by two.
Caution: This is only true for temperatures in the 250°F-500°F range.



SMALL DRY AND LIQUID MEASUREMENT
(1 ml, 2 ml, 5 ml, 15 ml, 25 ml)

INTERMEDIATE

MATH

Time Needed

20 minutes

Materials

egg carton
1 dozen eggs
pencil and paper

Objectives

To demonstrate the concept of fractions.
To recognize foods, other than meat, that are high in protein and found in the meat group.

Activity

Ask the children how many eggs are in one dozen. How is that expressed by fractions? (12/12) What part of the dozen would one egg be? (1/12) Now, place different amounts of eggs in the carton. Have the children look at the carton and write the number of eggs on their paper. Then write the fraction that represents that number of eggs as part of a dozen (3 eggs - 3/12 dozen). Tell the class to reduce the fractional amount if possible.

Discuss the meat group with the class, explaining that the meat group contains foods high in protein. Have the class develop a list of foods which belong to the meat group and indicate which members of the meat group are not meat.

INTERMEDIATE

MATH

Time Needed

30 minutes

Materials

graph paper
colored pencils
chalk board and chalk
labels from fruit juices, fruit drinks, and drink mixes

Objectives

To provide practice in graphing percentages.
To recognize that citrus juices contain vitamin C and need to be stored properly.

Activity

The children locate the nutrition information listed on the labels. Compare the nutrition information. Look at the ingredients list. Sugar will probably be listed first or second on the prepared mixes (lemonade, limeade, koolaid). Check the labels to see if vitamin C has been added (Hi C, etc.). Check the labels for storing information. Talk about the reasons for storing natural juices properly and reconstituting frozen juices only just before serving.

After discussion, the children should locate the percentage of U. S. Recommended Daily Allowance (U.S. RDA) of vitamin C listed on the label. Record the name of the drink and the % of vitamin C on the board. Talk about what U.S. RDA means.* The children then make a bar graph using the information that has been listed on the board.

NOTE:* The RDA's are guidelines including safety margins, for the nutrient intake for different population groups according to sex, height and weight. Nutritional labels use the largest nutrient requirement for normal adults and identify the percentage of that nutrient requirement that one serving provides. These requirements were revised in 1979 by the Food and Nutrition Board, National Academy of Science-National Research Council.

The new U.S. RDA for vitamin C for boys and girls ages 7-10 is 45mg. 11-14 is 50mg and 15-18 and all adults is 60 mg. Therefore, a serving of juice providing 50% RDA of vitamin C actually provides 30 mg (50% of adult requirement).

INTERMEDIATE

MATH

Time Needed

25 minutes

Materials

grocery ads from newspaper (1 per child)
paper and pencils

Objectives

To practice consumer skills.
To practice addition and subtraction skills.
To recognize the elements of a nutritious lunch.

Activity

Pass out a grocery ad to each child. Instruct them to plan a nutritious lunch for their family using the items advertised. Instruct them to figure the cost of the items they would buy. Note: You may have to supply the price of milk on the board. 1/2 gallon milk @ 90¢.

After the children have computed the amount they would spend, ask them how much change they would receive from $10.00 and $20.00.

Discuss which foods supply protein, fats, carbohydrates, calcium, Vitamin A and Vitamin C. Possibly discuss calorie contents and the food replacements which would reduce calories and increase nutrients.

INTERMEDIATE

MATH

Time Needed

20 minutes

Materials

a copy of the following worksheet for each student

Objectives

To practice computing percentage.
To recognize the need for water each day.

Background Information for Teacher and Student

Under normal conditions our bodies can obtain about (50%) of its water each day from the "solid foods" we eat. Water can be obtained from anything we eat or drink. Milk and fruit juices are about 90% water. Fruits and vegetables are about 80% water. Bread is about 30% water by weight. Meats are about 50% water.

Activity

Review computing percentages and discuss the facts presented at the top of the worksheet. Assign the worksheet as a class exercise.

Worksheet: Water, Water Everywhere

Water Content

Milk and fruit juices are about 90% water.
Fruits and vegetables are about 80% water.
Bread is about 30% water.
Meats are about 50% water.

Hint: To find percentage change the percent to a decimal (50% - .50) and multiply.

$$\begin{array}{r} 16 \\ \times .50 \\ \hline 00 \\ 80 \\ \hline 8.00 \end{array}$$

Work Space

1. Johnny drinks 800ml of milk every day. Use the chart above to help you find out about how much of the milk is water.

2. How much water is in a 4kg watermelon?

3. A loaf of bread weighs 500g. How much of it is water?

4. How much of 6kg turkey is water?

5. If you drink 200ml of orange juice every day for a week how much of that is water?

6. Mrs. Brown buys 12 peaches weighing 150g each. How much of the total weight would be water?

7. If Jim buys nine 500g loaves of bread how much of the total weight would be water?

8. Sarah bought three 1000g packages of carrots. How much of the total weight would be water?

9. The fifth grade class was planning a cookout. They bought three 500g packages of hamburger, two 500g loaves of bread and one 7kg watermelon. How much of the food they purchased was water?

Note: Children ages 7-12 need about 100 milliters per kilogram of weight. 13-19 year olds and adults need about 50 ml. per kilogram.
1 gram water = 1 milliter water

1 U.S. fluid ounce = 29.5 milliters. Therefore @ 236 milliters fill an 8 oz. glass

INTERMEDIATE

MATH

Time Needed

20 minutes

Materials

paper and pencils

Objectives

To reinforce the computation of fractional parts of a whole number.
To recognize the amount of water in the body.
To acknowledge the benefits water provides for the body.

Background Information

Water makes up about 2/3 of our body weight.

Activity

Discuss the benefits water provides for the body.
Have students compute 2/3 of their body weight.

Suggestion: If a remainder results when dividing by 3, drop the remainder.

Variations

1. Children can weigh themselves if a scale is available.
2. Use these weights instead of the children's own weights. (114, 93, 45, 60, 63, 66, 69, 81, 72, and 54).
3. Scientifically determine some of the students water needs, compare. See "Note" of previous activity.

INTERMEDIATE

MATH

Time Needed

20 minutes

Materials

a scale that weighs in grams
at least two semi-full cereal boxes with nutritional information (1 dense cereal, 1 airy)
a measuring cup

Objectives

To demonstrate that similar volume measures have different corresponding weight measures.
To recognize that nutrients are found in a cereal and milk combination and this information is often available on the label.

Activity

Have the class examine the nutritional labeling on the side of the cereal boxes. One cereal box might read that one ounce of this cereal and 1/2 cup of milk provides 30% of the riboflavin and B vitamins needed each day. Let each child pour and weigh the amount listed as the serving size on the cereal box he is using. Compare gram weight differences of similar volume measures. Next measure in liquid measure (milliliters) the amount of milk specified on the cereal box. (1/2 c. milk = approximately 120 ml.)

Discuss the nutrients provided by the cereal and those contributed by the milk. Explain the contributions these nutrients make to our bodies.

Possibly discuss fortification.

Review with the class the use of milliliters and liters for volume measures (ounces and cups) and grams for weight. Note the gram measures for protein, carbohydrates and fats on the label.

INTERMEDIATE

MATH

Time Needed

25 minutes

Materials

2 empty cereal boxes - 1 ready to eat (not presweetened)
1 cooked
chalk and chalkboard

Objectives

To recognize the nutrient information available on labels.
To recognize the various nutritive value of cereal.

Activity

Talk about the meaning of percentages. Make a chart on the board to list the nutrients listed under the U.S. RDA information listed on the boxes. The children then take turns reading the percentage of each nutrient from each box and write the percentage correctly in the proper place on the chart.

When the chart is completed, the class is instructed to make some conclusions on the nutritional value of cooked cereal vs. ready to eat cereal based on the chart. Possibly discuss fortification or enrichment. (Note: enriched cereals have only those nutrients naturally found in the grain product replaced after milling. Fortified foods contain additional nutrients.)

INTERMEDIATE

MATH

Time Needed

30 minutes

Materials

ditto sheet for each child
paper, pencil and crayons

Objectives

To practice multiplication and division consumer skills.
To recognize the nutritive values of specific foods.
To associate the physical benefits specific foods provide for their bodies

Activity

Talk about the vitamins that fruits contain and what these vitamins do for our bodies.

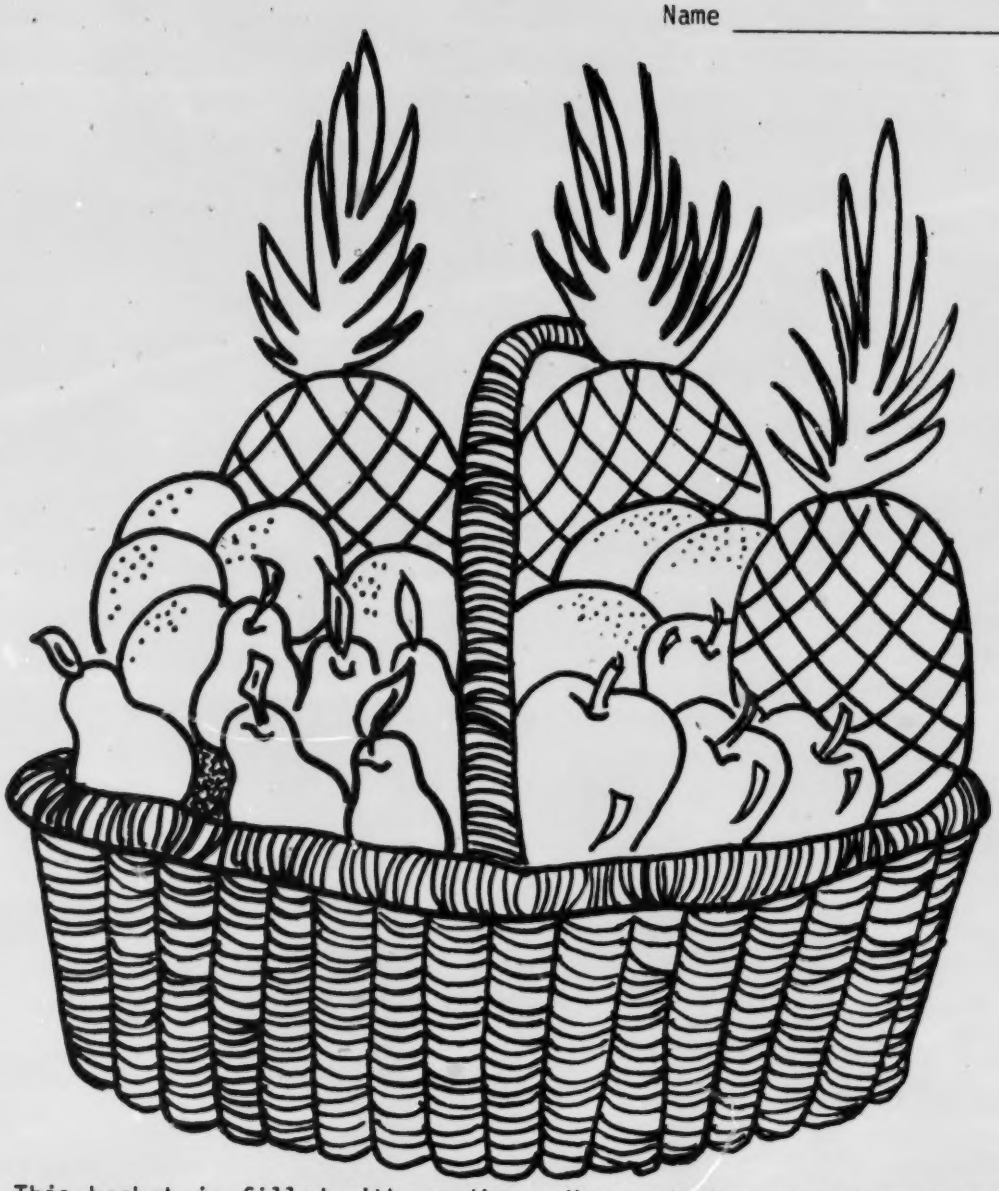
Give each child a copy of the ditto sheet and discuss nutrient values of the the fruits in the basket. Discuss and correct the answers.

Note: These nutritive values may be helpful.

	1 apple	1 pear	1/2 grape fruit	1 orange	1 cup pineapple
Calories	80	100	45	65	80
Water	84%	83%	89%	86%	85%
Protein (g.)	trace	1	1	1	1
Carbohydrate (g.)	20	25	12	16	21
Fat (g.)	1	1	trace	trace	trace
Vit. A I.U.			Pink 540		
Vit. A	120	30	White 10	260	110
Vit. C (mg.)	6	7	44	66	26
Thiamine (mg.)	.04	.03	.05	.13	.14
Ribotiavin (mg.)	.03	.07	.02	.05	.05
Niacin (mg.)	.1	.2	.2	.5	.3
Calcium (mg.)	10	13	19	54	26
Iron (mg.)	.4	.5	.5	.5	.8

from: Nutritive Value of Foods, U.S. Department of Agriculture, Home & Garden Bulletin #72, U.S. Government Printing Office, Washington, D.C. 20402

Name _____



This basket is filled with goodies. How much does the shopper have to pay for it?

Apples - 2/.25
Pears - 3/.59
Grapefruit - 2/$1.00
Oranges - 10/$1.00
Pineapple - .88 each

This basket has:
4 Apples
6 Pears
3 Grapefruit
5 Oranges
3 Pineapples

Color the basket and add a few of your own goodies.

INTERMEDIATE

MATH

Time Needed

45 minutes

Materials

grocery ads from newspaper
pencil and paper

Objectives

To associate nutrition knowledge with consumer skills.
To practice writing story problems and computing answers.
To identify the basic food groups and number of servings needed from each day.

Activity

Have the class bring grocery ads from the food section of the newspaper.

Discuss the basic food groups. Write the name of each on the board; list a few examples of each food group as given by the class.

Explain how many servings of each group are needed every day.

Have each child choose a food group, and using the newspaper, find sales of foods in that group. Using these sale prices, each child should write several story problems. Examples: If bread is on sale at 3 loaves for $.99, how much does one loaf cost? If oat cereal is on sale for $.89, how much would 2 boxes of oat cereal cost?

Have each child answer his own story problems first. Then let the class share story problems.

INTERMEDIATE

MATH

Time Needed

30 minutes

Materials

empty cereal boxes with nutritional labels, brought from home

Objectives

To practice multiplication and division skills.
To recognize the nutrition information available on labels.

Activity

Arrange the cereal boxes in alphabetical order. Place the cereal boxes in a row with the nutritional information in a readable position. Divide the class into five groups. Assign each group one of the following classifications:

1) List the cereals in the correct order from least expensive to most expensive based on cost per gram.

2) List the cereals by protein content from the least protein per serving to the most protein per serving.

3) List the cereals in order from the least calories per serving to the most calories per serving.

4) List the cereals by amount of sugar content from the least sugar to the most. (Might use grams of carbohydrate per serving)

5) Determine the 5 cereals lowest in calories per serving.

6) List the cereal boxes from the least net weight to the most net weight giving the weight in grams only.

7) Group the cereals according to the predominant grains they contain.

Have each group report to the class on its listing. Discuss with the class some general observations, such as, which cereal is best to eat for breakfast and which is worst. Discuss the amount of sugar that may be added at the table. Discuss those cereals that may be good snack foods. Discuss those that because of their sticky, sweet nature, may promote cavities.

INTERMEDIATE

SOCIAL STUDIES

Time Needed

25 to 30 minutes (two lessons)

Materials

map of the United States showing the states and their names; encyclopedia for locating information on wheat, knowledge of the B vitamins, their use and their sources, such as bread and cereal

Objectives

To determine which states produce the most wheat, dairy products.
To locate these states on an outline map of the United States.
To recognize wheat products as a source of B vitamins.

Activity

Give the children outline maps of the United States. Have them color in and label the states which produce the most wheat.

Discuss food products made from wheat. Discuss the B vitamins found in bread products.

Follow the same idea above and locate our leading dairy states on a map of the United States.

Dicuss food products made from milk. Discuss the nutrients found in milk products.

Discuss with the class vitamins and minerals, the benefits they provide for their bodies.

INTERMEDIATE

SOCIAL STUDIES

Time Needed

60 minutes

Materials

encyclopedia

Objectives

To recognize the culture of influence of foods habits, especially during holidays.
To identify a wider variety of food.
To research the origin of holidays.

Activity

Have each student pick a holiday and make a list of the foods his family enjoys on this holiday. Let each child look up his holiday in an encyclopedia to find out the origins of the holiday, how it's celebrated in other countries, and other foods associated with the holiday.

Have each student write a report on the holiday he chose.

INTERMEDIATE

SOCIAL STUDIES

Time Needed

30 minutes

Materials

encyclopedia
paper and pencil

Objectives

To compare the observance of a holiday (Easter) between two countries.
To recognize the nutrient value of an egg.
To recognize various methods of serving an egg.

Activity

As the holiday of Easter approaches, ask the children if they know how other countries celebrate Easter. Divide the class into groups of 3 or 4 students. Assign each group a country to look up in the encyclopedia and report on that country's observance of Easter. Assign one group to look up "eggs" in the encyclopedia and report on eggs.

Discuss the nutritional value of eggs.

	Fried in Butter 1 Egg	Hard Cooked Shell Removed	Poached	Scrambled in Butter Milk added
Calories	85	80	80	95
Water	72%	75%	74%	76%
Protein (g.)	5	6.	6.	6.
Carbohydrate (g.)	1	1.	1.	1.
Fat (g.)	6	6.	6.	7.
Vitamin A (I.U.)	290	260.	260.	310.
Vitamin C (mg.)	0	0.	0.	0.
Thiamin (mg.)	.03	.04	.04	.04
Ribotlavin (mg.)	.13	.14	.13	.16
Niacin (mg.)	trace	trace	trace	trace
Calcium (mg.)	26.	28.	28.	47.
Iron (mg.)	.9	1.0	1.0	.9

from: Nutritive Value of Foods, U.S. Department of Agriculture, Home and Garden Bulletin #72, U.S. Printing Office, Washington, D.C. 20402.

INTERMEDIATE

SOCIAL STUDIES

Time Needed

15 minutes

Materials

map of the United Sta
varieties of potatoes: potato, Idaho, small red and sweet potato
encyclopedia

Objectives

To practice using a map.
To recognize the nutritional value of the potato.
To recognize the nutrition-related affects of food processing.

Have the children look up the potato in the encyclopedia paying special attention to the section on the varieties and where they are grown. Have the children look on the map for South Dakota where the red potato is grown. Check the weather conditions and topography of the area. Next, check the map for Idaho and compare the weather conditions and topography for that area. Are there similiarities and differences? Ask where the sweet potato is grown and what kind of weather conditions and topography is required for growth. Can any general conclusions be drawn about the growing conditions of these varieties of potato? The small red potato is important for its market value. Ask the class where they think it is grown and why it is marketed before it grows too large.

Discuss the nutritional value of the potato.
Discuss the affect food processing (preparation) has on the nutritive value of foods.

	Baked potatoe without skin	Instant mashed potatoes 1 cup	French fries 10 strips	Potatoe chips 10 chips
Calories	145	195	110	150
Water	75%	53%	53%	2%
Protein (g.)	4.	4.	2.	1.
Carbohydrate (g.)	33.	30.	17.	10.
Fat (g.)	trace	270.	trace	trace
Vit. A (I.U.)	trace	7.	4.	8.
Vit. C (mg.)	31.	11.		trace
Thiamine (mg.)	.15	.08	.07	.04
Ribotiavin (mg.)	.07	.08	.01	.01
Niacin (mg.)	2.7	1.9	1.3	1.0
Calcium (mg.)	14.	65.	5.	8.
Iron (mg.)	1.1	.6	.9	.4

from: Nutritive Value of Foods, U.S. Department of Agriculture, Home and Garden Bulletin #72, U.S. Government Printing Office, Washington, D.C. 20402.

INTERMEDIATE

SOCIAL STUDIES

Time Needed

30 minutes

Materials

encyclopedia
map showing Ireland and England

Objectives

To recognize the effects the potato famine had in Ireland and the United States and individual families.
To recognize the nutritional value of the potato. See previous page.

Activity

Discuss briefly foods high in carbohydrates, stressing that these foods are often the main staple in some societies' diets. Discuss in particular the nutritional value of a potato.

Using the map, acquaint the class with the location of England, Scotland and Ireland.

Using the encyclopedia, look up the country of Ireland and read to the class about the potato famine of 1845-1847. Emphasize the poverty of nineteenth century Ireland and the fact that thousands died of starvation. Discuss the large amount of immigration to the United States and ask the class if any of them are of Irish descent.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

20 minutes

Materials

pencils and paper
dictionary for each child
copy of worksheet for each child, or
write words and sentences on board

Objectives

To practice locating words in a dictionary and to understand their meanings.
To understand what protein does for our body.

Activity

Children look up each vocabulary word in the dictionary and write them correctly in the sentences.

Variation: Children could divide vocabulary words into syllables.

Worksheet Name_____

Look up these words in your dictionary. Then write them in the correct sentences.

energy tissues hemoglobin antibodies enzymes

1. Proteins make _____ which carries oxygen to the cells.
2. Proteins form _____ in the bloodstream that fight off infection and disease.
3. Protein is required to maintain and repair body _____.
4. Protein foods provide _____, a capacity for action.
5. Protein produces _____ that regulate body processes.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

20-25 minutes

Materials

copy of the following worksheet

Objectives

To give practice in writing and punctuating sentences using a comma in a series.

To reinforce the knowledge of foods rich in vitamin A.

Activity

Explain to the class that vitamin A is essential to the growth of children and the development of the child before birth. It is needed for healthy bones and teeth. It controls eye diseases that lead to blindness and it is necessary for normal vision in dim light.

Dark green and orange vegetables and fruits give you the vitamin A you need. Have the class name foods they think are high in vitamin A.

Worksheet

Name_____

Let's Hear It for Vitamin A

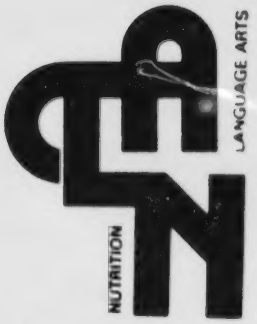
The following list of foods are rich in vitamin A which is needed by your body for proper growth and good eyesight. Use these foods to construct creative sentences about vitamin A. Your sentence must be one that uses a comma in a series punctuation rule.

Food rich in vitamin A: liver, carrots, apricots, cantaloupe, sweet potatoes, spinach, pumpkin, collards, broccoli, kale, turnip greens, yellow squash, mustard greens, tomatoes, and watermelon.

Example: Mustard greens, turnip greens, collards, and spinach are dark green leafy vegetables rich in vitamin A.

INTERMEDIATE

LANGUAGE ARTS



Time Needed

25 minutes

Materials

dictionary for each child
paper and pencils

Objectives

To practice using the dictionary and to recognize prefixes and base words.
To know the meaning of malnutrition.

Activity

Talk about the factors that make up good nutrition. The children find the word nutrition and the word malnutrition in the dictionary. Talk about the definition of both words and how the prefix "mal" changes the meaning of the base word. The children are then instructed to find 10 other words in the dictionary which begin with the prefix "mal" and to write each in a sentence to show that they understand the meaning. The children are instructed to be sure "mal" is being used as a prefix and to look up the base word in the dictionary if they are in doubt. Talk about how looking up the base word would prove that "mal" is being used as a prefix.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

60 minutes

Materials

4 activity cards

Objective

To role play a given situation.
To know the importance of a nutritious breakfast.

Activity

Discuss what constitutes a nutritious breakfast. Talk about the importance of a nutritious breakfast. Discuss possible behaviors in school when eating and not eating a nutritious breakfast.

Divide the class into four groups. Each group is given, at random, an activity card. Each group is instructed to make up a short play about a child eating the type of breakfast listed on their card. They should act out breakfast time at home, recess at school, and the class before lunch at school. The groups are given 25 minutes to plan their activity. Each group is then given an opportunity to present their play to the group. After each play is given, the class should decide if the child in the play had a nutritious breakfast.

Activity Cards

Groups I & II

Plan a breakfast. Make up a short play. In the play, tell about a child who has eaten a breakfast at home, what happens to the child at recess and what happens to the child at math class right before lunch. Be ready to present your play to the class in 25 minutes. The breakfast might be very high or very low in nutrients, but that will show up in the story.

Groups III & IV

Make up a short play. In the play, tell about a child who does not eat breakfast before going to school. Tell what happens before school, what happens at recess (does the child snack nutritiously?) and what happens at math class right before lunch. Be ready to present your play to the class in 25 minutes.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

30 minutes

Materials

paper and pencils
poster board and crayons or markers (optional)

Objectives

To express ideas in correct written form.
To recognize a nutritious snack.

Activity

Talk about what makes a snack nutritious. Children are instructed to choose their favorite nutritious snack. They are to think about it's shape, size, texture, color, taste, nutrition value, and why it appeals to them. They are then instructed to write about the snack in order to convince the reader that it is the best and most appealing snack to eat. Some children may want to make a poster to accompany their story in order to advertise their snack.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

20 minutes

Materials

pencils and paper
chalk and chalkborad

Objectives

To practice writing words in alphabetical order.
To recognize foods high in fats.
To recognize the benefits fats provide for their bodies.
To recognize the affects of too much fat or too many calories.

Activity

Talk about the need for fats in our diets. Discuss the bodies storage ability when too many fats or calories are eaten. Write the list of foods highest in fats on the board. Instruct the children to write the words in alphabetical order.

Word List

olives	butter	nuts
salad dressing	lard	oils
goose	margarine	bacon
chocolate	cream	potato chips
	egg yolk	avocado

INTERMEDIATE

LANGUAGE ARTS

Time Needed

25 minutes

Materials

paper and pencils

Objectives

To construct and spell words correctly.
To recognize the benefits carbohydrates provide for their bodies.

Activity

Talk about what carbohydrates do for our bodies. Write the word carbohydrates on the chalkboard. Give the children 10 minutes to make and spell correctly as many words as they can from the word. Each letter may only be used as many times as it appears in the word. At the end of the ten-minute time period ask a child to read his list of words. Everyone, including the reader, should cross out any words on his list that anyone else has written. Proceed in the same manner with other children. The winner is the child with the most words, spelled correctly, that no one else has written.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

25 minutes

Materials

paper and pencils
list of foods high in carbohydrates (see below)

Objectives

To recognize the number of syllables in words.
To recognize which foods are high in carbohydrates.
To associate the benefits carbohydrate foods provide for the body.

Activity

Talk about what carbohydrates do for our body. Talk about the food groups carbohydrates are found in. Discuss serving sizes and high, low calorie foods. Instruct the children to make three columns on their papers. The children should number the columns 1, 2, & 3.

Write the word list on the board and instruct the children to sort the words according to the number of syllables and write them in the correct corresponding column on their paper. Have students put a "B" for bread group foods, "FV" for fruit/vegetable and "SF" for the sweets, fat group foods.

Word List - Foods High in Carbohydrates

dates	bananas	rice
doughnuts	beans	jams
honey	chocolate	cakes
mincemeat	cocoanut	cereals
molasses	corn	crackers
popcorn	peas	prunes
rolls	peanuts	raisins
syrup	potatoes	sugar

INTERMEDIATE

LANGUAGE ARTS

Time Needed

20 minutes

Materials

None

Objectives

To reinforce recall and spelling of common fruits and vegetables.
To identify foods that are high in vitamin C.

Activity

Explain to the class that vitamin C, ascorbic acid, is necessary for binding the body cells together for growth and repair of the body, for healthy gums and blood vessels, for sound bones and teeth, and for proper functioning of the other nutrients that we eat such as iron and calcium.

Vitamin C must be eaten each day as it cannot be stored by the body. Foods rich in this vitamin are: broccoli, cantaloupe, strawberries, citrus fruits and their juices (grapefruit, orange, lemon), watermelon, turnip greens, cauliflower, mustard greens, potatoes, cabbage, tomatoes, asparagus, green pepper, etc.

Form teams of 5 each. Line up each team alphabetically by last name. The first child on each team draws lots for team order. The first player of team #1 thinks of a food rich in vitamin C and the first player of team #2 must spell it. If the player spells the word correctly, his team receives a point and that player thinks up a vitamin C food for the next team to spell. If the food thought of is a food rich in vitamin C, the team that thought of it also receives a point. Failure to think of a vitamin C food in a reasonable amount of time takes away a point from that player's team. Failure to correctly spell the word neither gives nor takes a point as that food could be used again by another player, thus giving another child a chance to correctly spell it. The player that could not correctly spell the word may still suggest a vitamin C food for the next team. Other team members may suggest a food if that player cannot. Players continue taking turns between teams until a predetermined score or time limit is reached. Words might be written on a chalkboard as they are being spelled and erased if incorrect, thereby allowing that food to be used again.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

20 to 25 minutes

Materials

examples of couplets

Objectives

To practice rhyming words or slogan writing.
To specify the number of servings needed each day from each of the basic food groups.

Activity

On the blackboard, work up a chart of the basic food groups, examples of each group, and the number of servings needed from each every day. Have the class participate in this discussion as you work up the chart.

Explain to the class that a couplet is two lines of words that rhyme and make a sentence. Give the class a few examples, such as:

Two servings of meat
Just can't be beat.

With 2 servings of beans, eggs, or meat,
You can accomplish any feat.

Have the class try writing couplets using as their subject matter the food groups and the number of required servings.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

20 minutes

Materials

none

Objectives

To write creatively and construct sentences.
To associate affects emotions might have on digestion.

Activity

Ask the class for different emotions and develop this list of emotions on the blackboard. Ask the class if their emotions ever affect how they eat, when they eat, or what they eat. Lead this discussion to a general conclusion that our emotions do affect the way we eat. Explain that these emotions also affect our digestion of food.

Using the list of emotions on the blackboard, have the class create the "Peanuts Gang" sentence of "Happiness is . . ."

Have students pick emotions and write about them in this way. Share the finished sentences with the class.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

15 to 20 minutes

Materials

copy of the following worksheet
dictionary

Objectives

To practice marking the vowels in words with closed syllables.
To reinforce identifying foods rich in vitamin A.

Activity

Explain to the class that vitamin A is essential to the growth of children and the development of the child before birth. It is needed for healthy bones and the proper functioning of the mucous membranes that line the body. It affects eye diseases that lead to night blindness and is necessary for normal vision in dim light. Carotene, named after carrots, is an orange-yellow pigment which turns into Vitamin A in the body. It is found in dark green or orange-yellow colored vegetables and fruits such as carrots, cantaloupe, pumpkin, apricots, sweet potatoes, etc.

Have the class complete the worksheet. Discuss.

Worksheet Name_____

A Short Encounter With Vitamin A

The following foods rich in vitamin A all have a closed syllable in which the vowel will be sounded short. Find the closed syllable (one that ends with a consonant). Mark the vowel short and pronounce the word to yourself. Be ready to say the list for your teacher or a friend. Use the underlined word in a two word example.

1. liver
2. spinach
3. chicken liver
4. broccoli
5. pumpkin
6. mustard greens
7. cantaloupe
8. collards
9. melon
10. carrots

INTERMEDIATE

LANGUAGE ARTS

Time Needed

15 to 20 minutes

Materials

copy of the following worksheet for each student
dictionary if necessary

Objectives

To give practice in syllabication by deciding how many syllables are in a word.
To acquaint the students with calcium rich foods.

Activity

Explain to the class that calcium is a basic material needed to build and maintain bones and teeth. Calcium also plays an important role in the regulation of heartbeat, clotting of the blood, digestion, and healthy nerve functioning.

Complete the worksheet and discuss.

Worksheet

Name_____

Calcium Count

The following foods are rich in calcium. Read each word. Decide how many syllables there are. Write that number beside the word. Use only the underlined word in examples of more than one word.

Example: dairy products 2

1. turnip greens
2. figs
3. green olives
4. celery
5. horseradish
6. caviar
7. cauliflower
8. kale
9. yogurt
10. milk
11. apricots
12. dried peaches
13. broccoli
14. capers
15. watercress

Note: You should have found 3 one syllable words, 5 two syllable words, 6 three syllable words and 1 four syllable word.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

spare time activity at school

Materials

food sections of newspapers

Objectives

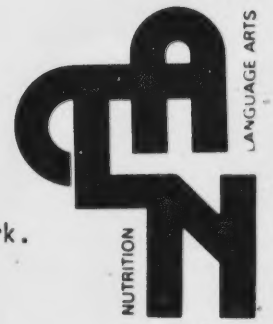
To practice using the newspaper to collect information and to reinforce words being studied.
To find verifying information that good nutrition is important to good health.

Activity

Have the children use the food section of the newspaper to look for information concerning good nutrition. Students can underline nutrition words, make reports, or have class discussions about interesting articles brought in. A Nutrition News bulletin board could be set up in the room.

INTERMEDIATE

LANGUAGE ARTS



Time Needed

May take more than one 25 minute session. Could be homework.

Materials

colored paper, scissors, glue

Objectives

To provide an opportunity to write a skit or puppet play.
To demonstrate the daily need for vitamin C which is needed each day and cannot be stored in the body.

Activity

Explain to the class that vitamin C is a water soluble vitamin and cannot be stored. It also escapes from the food itself if not eaten immediately or kept refrigerated, frozen, cooked quickly or kept covered.

After discussing the information with students, ask them to write a skit for a paper plate puppet, finger puppet, or sock puppet in which they creatively explain the vitamin C storage problem.

Suggestion: An outer space person has just landed and Citrus Sam is trying to explain that here on earth we must eat certain nutrients to be healthy. Work in, of course, the idea that vitamin C, one of our most valuable vitamins for good nutrition must be eaten every day. Encourage clever names incorporating nutrition words, etc.

Ideas: Teacher and Class -- Teacher teacnes her class about vitamin C.
Employment Office -- Manager is explaining to all the citrus fruits and vegetables what they will be expected to do if hired. This lends itself to clever naming of the manager and the employees.
Mystery -- Vitamin C is being carefully stored, but he always gets away--solve mystery.
Jail Break -- Escape of vitamin C and his capture.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

5-7 minutes

Materials

background knowledge of the nutrition objective below

Objectives

To practice speaking in complete sentences.
To practice oral recall of the six major nutrients; proteins, fats, carbohydrates, vitamins, and minerals and their function in the good health of the body.

Activity

Combine the task of lunch count, roll call, or just starting off the day with giving each student a chance. Whip around the room and let each person name a nutrient and its function in the body. Students must use a complete sentence.

Example: roll call and lunch count whip. I am Ben Barleycorn. My nutrient is protein. Protein builds and repairs our muscles. I am not eating lunch.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

Two 25-minute sessions

Materials

cereal boxes with nutrition information panel
glue
scissors
construction paper
marking pens or crayons

Objectives

To provide an opportunity for creative thinking.
To recognize as a source of B vitamins.
To identify the bread-cereal group advertising techniques.

Activity

Using the cereal boxes brought to class, discuss cereals. Review the names of some cereals on the market today. Explain and discuss the nutritional information on the cereal box paying close attention to the B vitamins.

Have the children use their imagination to create a new cereal. Give it an appropriate name. Using an old cereal box, cover it with construction paper and design a box, put a name on it, write the qualities and benefits of the cereal on the box, make a nutritional label, write a commercial for the cereal.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

20-25 minutes

Materials

none

Objectives

To provide an opportunity to write creatively.
To recognize the affects emotions can have on digestion.
To distinguish between positive and negative emotions.

Activity

Develop a list of positive and negative emotions such as joy, anger, hope, fright, worry, etc. Use the following format for constructing a free poem acrostic style. Let each student write his own.

FEAR

F frightened of tests
E everything goes black
A almost ready to cry
R relax, smile, make the best of it

Share the poems with the class or illustrate it and display attractively. Make a class booklet of emotion poems. Submit them to the school newspaper.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

30 minutes

Materials

copy of the following worksheet for each student
dictionary

Objectives

To practice dividing words into syllables which follow the vcv, vccv, or compound rules.
To acquaint the students with foods rich in calcium.

Activity

Explain to the class that calcium is a basic material needed to build and maintain bones and teeth. Calcium also plays an important role in the regulation functioning.

Have the class complete the worksheet.

Worksheet Name_____

Calcium Syllables

Here is a list of foods that are rich in calcium. Each one of them follows a familiar vowel rule: vcv, vccv, or compound rule. Look at each food word (use only the underlined word in examples of more than one word) and decide which vowel rule applies. Divide the word into syllables. Count the syllables. Write the number of syllables by the word. Then write the word in the proper column.

Foods Rich in Calcium

yogurt	butter	kidney beans	broccoli
turnip greens	watercress	cabbage	horseradish
soybeans	buttermilk	apricots	whitefish
pinto beans	lentils	endive	raisins

Example: white fish

VCV	VCCV	Compound
		white fish

INTERMEDIATE

LANGUAGE ARTS

Time Needed

15 minutes

Materials

copy of the following titles on the chalkboard or on ditto sheet

Objectives

To reinforce capitalization of words in a title.
To recognize the affects emotions can have on digestion.

Activity

Explain to the class the rules of capitalization of words in a title. Have the class properly capitalize the following titles.

Titles about Emotions

how anger ruined the stomach's picnic

how a smile cured a stomachache

how happiness and the stomach became lifelong friends

how fear destroyed a perfectly good breakfast

the mystery of the stomachache and the math test

Review the students' answers. Then have the class create and capitalize their own titles.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

Materials

none

Objectives

To practice the spelling of words.
To reinforce any area of nutrition needing recall.

Activity

Play this game after students have had other nutritional activities acquainting them with the selected area.

Decide the area for play, such as foods rich in vitamin C or foods belonging to the meat group. One or two players are selected to go to the board. They decide on the food rich in vitamin C they are going to use. They then put a blank for each letter in the word they've chosen and draw a scaffold for the hangman. The other participants then guess the letters in the word until they guess the word. If incorrect letters or answers are called out, one feature of the hangman is added.

If a participant guesses the finishing letter to the word or figures out the word and can pronounce it, he then goes to the board. If the word is not guessed before the hangman is completed, the same child stays at the board and thinks of a new word. This can be played individually or in teams.

INTERMEDIATE

LANGUAGE ARTS

Time Needed

10 minutes or more

Materials

prior knowledge of area to be used for the game

Objectives

To obtain practice in listening skills.
To recognize food sources of specific nutrient.

Activity

Play the game of strengthening listening skills called "I'm going on a trip and I'll take . . ." For this game, explain that we are going to cook a dinner, or plan a party, or go on a picnic and all the food is to be of one category, for example, calcium rich foods. Players form a line. First player begins by saying, "I'm planning a picnic . . ." and repeating in the correct order the calcium foods given by each player and adding one of his own. Failure to do this properly causes the player to drop out of the game. The last player who can repeat each correctly is the winner. If a player gives an incorrect food, he is also out.

INTERMEDIATE

SCIENCE

Time Needed

10 minutes each day for several days

Materials

pictures of foods from magazines
large shoe boxes labeled with desired nutrients
large box for pictures

Objectives

To practice classification skills.
To identify foods rich in certain nutrients.

Activity

Decide which nutrient(s) the class should work on. Develop with the class a master list of nutrients and foods containing these nutrients.

Have the children bring magazine pictures of foods to school. Place all pictures in a large box. Label the shoe boxes with the nutrients you are concentrating on. From the large box, pull out a single picture. Identify each picture as to its food group and its nutrients. Place the picture in the proper shoe box. (Some pictures will be eligible for more than one shoe box.)

INTERMEDIATE

SCIENCE

Time Needed

10 minutes

Materials

a sweet potato
a proper container to hold water
toothpicks

Objectives

To recognize reproductive methods of root vegetables.
To identify foods rich in vitamin A.
To associate yellow vegetables with the pigment carotene, provitamin A.

Activity

Have the children start a sweet potato vine for the classroom. Bring a sweet potato to class with a glass jar container of some type to start it in. Fill the container with water, choose one end of the sweet potato to go down into the water. Use the toothpicks to hold the rest of the potato so that it does not touch the bottom of the container. Soon a vine will start to grow. Be sure to show the children the yellow color (carotene) of the sweet potato and review the nutritional value of vitamin A.

Carrots also are a root vegetable rich in vitamin A and will grow tops in a glass of water.

INTERMEDIATE

SCIENCE

Time Needed

20 minutes

Materials

serving cups, milk carton labels with nutritional information
homogenized milk (whole)
2%, 1% or skim milk
encyclopedia

Objectives

To determine the application of homogenization in milk.
To identify nutrients in milk.
To practice reading labels.
To associate milk types with fat content and therefore calorie differences.

Activity

Have the class look up the word "homogenized" in the encyclopedia. Discuss this process and other foods which are homogenized.

Have the class examine the milk labels and compare the nutritional information. Emphasize the protein, vitamin, and mineral content of milk. Have the class compare differences in cost, calories, and taste among the types of milk brought to school. Be sure to explain that the only difference is in fat content: whole milk is 3% fat; 2% milk is 2% fat; buttermilk is @ 2% fat; skim milk contains little fat.

Let the class taste the different kinds of milk. Ask them which they like best and how milk preferences may change throughout life stages.

INTERMEDIATE

SCIENCE

Time Needed

40 minutes

Objectives

To practice record keeping skills.
To recognize the affect our emotions have on digestion and food choices.
To distinguish between positive and negative emotions.

Activity

Discuss with the class different emotions they experience and ask for possible explanations of these emotions. Explain the words "positive" and "negative." Classify some of the discussed emotions as either positive or negative.

For a period of one day, have the class record individually their positive and negative feelings. On a sheet of paper, let them write down their feelings and a brief explanation of why they felt like that.

Discuss with the class the effects of their feelings. Lead the discussion to how their feelings affect what they eat, how they eat it, and how they feel after they've eaten it.

INTERMEDIATE

SCIENCE

Time Needed

Homework activity

Materials

bread wrappers
cereal boxes
milk containers

Objectives

To identify nutrition information sources and collect data.
To recognize nutrients found in the bread-cereal group and in the milk group.

Activity

Have the children look for the nutritional information on bread wrappers, milk product containers, and cereal boxes. Bring into class to make a display on the science table or corner.

Ask the class to collect information from the labels. Assign different students different information gathering tasks that deal with the nutrients you wish to emphasize.

Let the students share with the class the information they obtain.

Possible data collection tasks
- serving size and calories per serving for each product
- grams of protein, carbohydrates and fats from a serving of each product
- percentages of Thiamine, Riboflavin and Niacin from a serving of each product
- the first 5-7 ingredients of each product.

Illinois State Board of Education

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